

LIQUIDITY AND CAPITAL OF ISLAMIC BANKS IN INDONESIA

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Abstract

This study is aimed to analyze the factors that affect the liquidity and capital of Islamic banks in Indonesia. The method is used multiple linear regression. This result shows that the main problem of Islamic banks in Indonesia is how to increase equity in line with increasing third party fund. Another problem is that Islamic bank face difficulties to find debt for solving liquidity problem due to lack of instruments for liquidity derivative. Therefore Islamic banks rely on third party funds, which are high cost of funds due to time deposit fund, rather than using current deposit and saving deposit fund. Another result, negative coefficient of Gross Domestic Product (GDP) to Quick Ratio (QR) indicate that if macroeconomics of Indonesia is stable and good environment, Islamic banks will expansive the market, meanwhile Islamic banks have now low level of liquidity buffer. This means Islamic banks face high level of risk, if core depositors withdraw money rushly it became default.

Keywords: liquidity, capital, banking procyclicality, capital buffer

Abstrak

Penelitian ini bertujuan untuk menganalisis faktor-faktor yang mempengaruhi likuiditas dan permodalan bank syariah di Indonesia. Metode yang digunakan dalam penelitian ini adalah regresi linear berganda. Hasil penelitian ini menunjukkan bahwa masalah utama pada perbankan syariah di Indonesia adalah bagaimana meningkatkan modal sejalan dengan peningkatan dana pihak ketiga. Masalah lainnya adalah bank syariah menghadapi kesulitan dalam memenuhi kebutuhan likuiditas yang disebabkan oleh kurang instrumen likuiditas derivatif. Maka bank syariah sangat tergantung pada dana pihak ketiga berupa deposito berjangka yang lebih mahal, dibandingkan dengan giro atau tabungan. Hasil lain dari penelitian ini menunjukkan bahwa terdapat pengaruh negatif antara Produk Domestik Bruto (PDB) dengan Quick Ratio (QR) yang mengindikasikan bahwa jika kondisi ekonomi makro Indonesia sedang stabil, maka bank syariah akan semakin ekspansif, sementara disisi lain bank syariah memiliki cadangan likuiditas yang rendah. Hal ini berarti bank syariah menghadapi risiko yang tinggi jika nasabah inti menarik dananya secara massal yang dapat mengakibatkan default atau gagal bayar.

Kata Kunci: likuiditas, permodalan, prosiklikalitas perbankan, capital buffer

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INTRODUCTION

The global financial crisis that occurred several time ago makes liquidity needs became increasingly importance. If the liquidity is not running smoothly, it is almost certain to be the economic crisis as well as in Indonesia in 1998 where the crisis is getting worse in the event of sudden withdrawl on a large scale in Indonesian banks. The liquidity crisis can also occur on a global scale, for example in the case of the global financial crisis in the United States in 2008, liquidity crisis can spread out to many countries.

In measurement of liquidity both conventional and Islamic banking, financing to deposit ratio (FDR) is often used as a reference. This ratio compares the financing provided by Islamic banks against third party funds (TPF). The ratio of FDR should always be in an ideal position, not too low or high. If ratio of FDR too low, this means that Islamic banks are not distributing optimally the funds to the lenders. Meanwhile if the ratio of FDR too high, this mean that Islamic banks are very expansive in financing. The banks could achieving greater profit when banks too expensive in financing, moreover Bordelelau & Graham (2013) state that the bank will have greater liquidity risk. Too many of third party funds (TPF) channelled to financing could be more risky in case of a lot of sudden withdrawl. Aspach et. al. (2005) state that the opposite will happen if the banks hold too much liquidity, because holds a lot of liquidity would reduced the profitability of banks because there is idle potential funds.

The growth of ratio of FDR in conventional banks in Indonesia during periods of June 2010 - September 2014 shows that the Conventional Banks FDR have proportional values which are equal to 83%. 5 Large banks recorded ratio of FDR is 78% for Bank Mandiri, 65.1% for BCA, 85.9% for BRI, 77.5% for BNI, and 89.6% for CIMB Niaga respectively. Only CIMB Niaga has above average ratio of FDR in the conventional banks. Central bank of Indonesia is divided four groups based on its capital. Category I are the banks with capital below Rp 1 trillion, Category II are the banks with capital around Rp 1 to 5 trillion, Category III are the banks with capital around Rp 5 to 30 trillion, and Category IV are the banks with capital above Rp 30 trillion. It is given the category of Bank CIMB Niaga is the category III of capital under other four conventional banks.

While the average ratios of FDR of *Islamic Banks* (IB) higher than the conventional one. For examples the ratio of for Bank Syariah Mandiri is 89.26%, 99%

for Bank Muamalat Indonesia, 89.19% for Bank BNI Syariah, 98.82% for Bank BRI Syariah, and 89.7% for Bank Mega Syariah. The Indonesia Financial Service Authority (FSA) reported that the average of ratio of FDR in national Islamic banking during period of January 2010 - November 2014 is 102%.

Table 1. Comparison of Conventional and Islamic Banks FDR in Indonesia in period of June 2010 – September 2014 (in %)

Periode	IB	CB	BSM	Muam	BNIS	BRIS	Mega-S	Mandiri	BCA	BRI	BNI	CIMB
Jun-10	96.1	75.3	85.2	103.7	73.7	91.2	86.7	64.2	51.4	90.2	68.2	82.5
Sep-10	95.4	77.1	86.3	99.7	150.6	102.2	89.1	76.3	58.3	87.4	68.6	86.1
Des-10	89.7	75.2	82.5	91.5	68.9	95.8	78.2	65.4	55.2	75.2	70.2	85.2
Mar-11	93.2	76.8	84.1	95.8	76.5	97.4	79.2	67.9	54.4	85.8	68.2	87.1
Jun-11	94.9	79.7	88.5	95.7	84.5	93.3	81.5	73.4	55.9	88.4	76.1	90.2
Sep-11	95.0	81.4	89.9	92.5	86.1	95.6	83.0	76.3	52.6	82.2	78.3	91.9
Des-11	88.9	78.8	86.0	94.2	78.6	90.6	83.1	71.7	61.7	76.2	70.4	90.7
Mar-12	87.1	79.4	87.3	97.1	78.8	101.8	84.9	79.0	61.6	84.0	76.1	92.4
Jun-12	98.6	82.6	92.2	99.9	80.9	102.8	92.1	81.4	65.5	82.1	73.6	95.1
Sep-12	102.1	83.3	93.9	100.0	85.4	100.0	88.0	82.2	65.7	85.2	76.8	90.2
Des-12	100.0	83.6	94.4	100.0	85.0	103.1	88.9	77.7	68.6	79.9	77.5	90.8
Mar-13	102.6	84.9	95.6	102.2	80.1	100.9	98.4	81.0	71.1	89.6	82.6	82.4
Jun-13	104.4	86.8	94.2	106.4	92.1	103.7	104.2	82.8	73.2	89.3	84.0	91.6
Sep-13	103.3	88.9	91.3	103.4	96.4	105.6	102.9	85.7	73.9	90.9	84.7	88.8
Des-13	100.3	89.7	89.4	100.0	97.9	102.7	93.4	83.0	75.4	88.5	85.3	89.1
Mar-14	123.1	91.2	90.3	105.4	96.7	102.1	95.5	86.6	77.1	92.0	88.4	92.9
Jun-14	134.6	90.3	89.9	96.8	99.0	95.1	95.7	85.4	75.5	94.0	80.3	92.5
Sep-14	131.7	88.9	85.7	98.8	94.3	94.9	90.5	84.3	75.9	85.3	85.7	93.8
Average	102.3	83.0	89.3	99.1	89.2	98.8	89.7	78.0	65.1	85.9	77.5	89.6

Source : Indonesian Financial Service Authority (FSA) report 2014 dan Islamic Bank Annual report (data processed).

Notes: BSM: Bank of Sharia Mandiri; Muam: Bank Muamalat Indonesia; BNIS: Bank of BNI Sharia; BRIS: Bank of BRI Sharia; Mega-S: Bank of Mega Sharia; Mandiri: Bank of Mandiri; BCA: Bank of Central Asia, BRI: Bank of Rakyat Indonesia, BNI: Bank of Negara Indonesia, CIMB: Bank of CIMB Niaga.

Islamic funding is divided into three parts, first is capital of shareholders. Second, borrowing from other parties and third is raising funds from the public. This mean Islamic banks has already use of capital shareholder as equity for financing to the

customers, this would be high risk given the potential rush depositors. Ismal (2010) suggested that liquidity instruments can accommodate the needs of Islamic banks in financing customers.

The next problem is how strong Islamic banks capital in overcoming liquidity problems that could occur anytime. In common knowledge capital for a bank is required to: (1) business expansion, (2) daily operation, (3) determining the lending limit (LL) and (4) anticipate risk. Islamic banks do not just use it money only for liquidity needs, it has to allocate the capital to some other things related to the activities of banks (Riyadi, 2004).

Bonner et.al (2013) stated that one of the main problems in the banking activities is liquidity because it involves the reputation of the bank to the customer. However the bank must return the funds belonging to depositors whenever requested. Islamic bank liquidity conditions in Indonesia have not been in ideal conditions. For example, during the period 2010 – 2014, the average ratio of FDR on Indonesian Islamic banks is still above 90%. This means that almost the third party fund (TPF) transferred to the financing, thereby only about 10% of the funds available provided to be withdrawal by depositors.

Aspach et.al (2005) stated that there is a negative relationship between liquidity and profitability, if the bank reserve is provide more funds for liquidity in anticipation of a lot of the withdrawal by depositors, the bank may lose profit which should be obtained because the funds are used for financing. The dilemma conditions require Islamic banks pay attention to capital. Capital is crucial case, especially in anticipation of the possible risks, including changes in the portion of deposits. For example, when Islamic banks received large numbers of deposits just in a short time, automatically Islamic banks must increase their capital as well, it will increase liquidity risk because capital buffers are declined if banks don't increase their capital.

The condition of Islamic banking liquidity in Indonesia was not so good and has sufficient capital during the period of 2010 to 2014. Moreover Islamic banks has insufficient capital. Both of these problems required a deeper analysis of Islamic banks in particular how the balance between liquidity and capital. Islamic bank in Indonesia is still in the stage of fast growth so that the liquidity and capital must be

able to adjust quickly in order to maintain the soundness of banks. Liquidity of depositors is most important for banks, because of concerns the bank's reputation. As anticipated in the short term to manage Islamic banks liquidity, there are a few liquidity instruments that already exist. These instruments are SBIS (Bank Indonesia Certificates-Sharia), SIMA (Interbank Mudharabah Investment) and PUAS (Islamic Interbank Money Market). In addition there is also sharia commodity instruments traded in the Jakarta Futures Exchange (JFX), but the regulator has not supported these instruments as well.

According to Ismal (2010), the Islamic Banks liquidity condition in Indonesia was criticized for the lack liquidity instruments, institutional deepening, as well as the restructuring of the management of assets and liabilities. Wuryandani et.al (2014) stated that Monetary policy such as the level of the reserve requirement (RR), interbank rates in money market and FSI (financial stability index) were more affect for precautionary liquidity of small banks in Indonesia. Wahab et.al. (2014) find that conventional banks is more efficient than Islamic banks. Warninda and Hosen (2015); Hosen and Rahmawati (2016) find the relationship between efficiency and profitability in Islamic rural bank. Adawiyah (2015) find that there are no efficiency differences between foreign and Islamic banks.

Aspach, et.al (2005) stated that the role of the *lender of the last resort* (LoLR) facility has a positive side to the liquidity of banks because its increases the liquidity buffer, especially in times of crisis. Nevertheless, the role of LoLR facilities potentially triggering moral hazard. Bonner, et.al (2013) also examined that the factor of liquidity regulation has a very large role in influencing the liquidity of a bank and affect almost all banks financial indicators. Islamic banks should be able to strengthen its capital. Islamic banks could issue sukuk or request additional capital from its shareholders. Islamic banks that still in the category of Sharia Business Unit or Islamic Windows form conventional banks can more easily anticipate the risk of liquidity because it has stronger capital from it conventional holding banks in supporting the massive sudden reversal of its depositors. While Islamic banks are already in the category of Islamic Banks is relatively difficult to request additional capital from the conventional holding bank or shareholders. The

Islamic banks are more at risk than Islamic business units if the liquidity problem will occur.

It can be seen that the availability of capital has close links with the liquidity conditions (Distinguin et. al., 2013). The results showed that bank holds the lower capital can create liquidity, for example, when banks create illiquid financing using liquid liabilities. Otherwise, banks are not able to build up capital when banks faced tight liquidity conditions as defined in Basel III, for example, when the bank extensively issuing financing with unstable liability. Distinguin et. al. (2013) also argues that there are internal and external factors could affect the liquidity and capitalization of banks.

METHOD

This study used quarterly Islamic Banks Financial Statements in Indonesia during March 2008 to September 2014. The number of time series data of each bank is different considering the different establishment of each Islamic Banks. The Banks which selected in this study are Bank Muamalat Indonesia (Mua), Bank Syariah Mandiri (BSM), Bank Mega Sharia (BMS), Bank BRI Sharia (BRIS), Bank BNI Sharia (BNIS) and Bank Sharia Bukopin BSB) in the periods of March 2008 to September 2014. This used models of analysis which proposed by Distinguin, Roulet and Tarazi Models (2013) in measuring factors that affect liquidity and capital. The Models can be used proposed in this study as follow:

Model 1:

$$\text{CAR} = \alpha_c + b_{c1}\text{QR} + b_{c2}\text{FDR} + b_{c3}\text{SIMA} + b_{c4}\text{CFR} + b_{c5}\text{ROA} + b_{c6}\text{ROE} + b_{c7}\text{FLP_TF} + b_{c8}\text{EA_TA} \\ + b_{c9}\text{EA_GWT} + b_{c10}\text{LN_TA} + b_{c11}\text{GDP} + e_c$$

Model 2:

$$\text{QR} = \alpha_c + b_{c1}\text{CAR} + b_{c2}\text{ROA} + b_{c3}\text{FLP_TF} + b_{c4}\text{LN_TA} + b_{c5}\text{BUSI_MD} + b_{c6}\text{GDP_GWT} \\ + b_{c7}\text{BI_RATE} + b_{c8}\text{BI} + e_c$$

Model 3:

$$\text{FDR} = \alpha_c + b_{c1} \text{CAR} + b_{c2} \text{ROA} + b_{c3} \text{FLP_TF} + b_{c4} \text{LN_TA} + b_{c5} \text{BUSI_MD} + b_{c6} \text{GDP_GWT} \\ + b_{c7} \text{BI_RATE} + b_{c8} \text{JBI} + e_c$$

Model 4:

$$\text{SIMA} = \alpha_c + b_{c1} \text{CAR} + b_{c2} \text{ROA} + b_{c3} \text{FLP_TF} + b_{c4} \text{LN_TA} + b_{c5} \text{BUSI_MD} + b_{c6} \text{GDP_GWT} \\ + b_{c7} \text{BI_RATE} + b_{c8} \text{JBI} + e_c$$

Model 5:

$$\text{CFR} = \alpha_c + b_{c1} \text{CAR} + b_{c2} \text{ROA} + b_{c3} \text{FLP_TF} + b_{c4} \text{LN_TA} + b_{c5} \text{BUSI_MD} + b_{c6} \text{GDP_GWT} \\ + b_{c7} \text{BI_RATE} + b_{c8} \text{JBI} + e_c$$

RESULTS AND DISCUSSION**Result**

There are 29 models of liquidity and capital in the classical assumption test. In the normality test, there are 6 cases of models of data are not normal and 23 models are normal. In heteroscedasticity test there are no models have heteroscedasticity problem. In autocorrelation test, there are 4 models have autocorrelation and 25 have no autocorrelation problem. In the multicollinearity test, there are some serial correlation in existing models. In the classical assumption test can be concluded that 24 regression model are free from the classical assumption of normality, homoscedasticity and autocorrelation although there are still some serial correlation.

Adjusted R squared results on the dependent variable CAR figures shows that varied from 37% to 97% for each bank, it means that all of the independent variables affect approximately 37% to 97% of the value of the dependent variable, while the remaining 63% to 3% are influenced by other variables that exist outside the model. Simultaneously, all coefficients of the independent variables in the CAR model are significant to affect the dependent variable.

Meanwhile for the dependent variable of liquidity models that has adjusted R Squared is quite large which a value of R^2 above 50% like Quick Ratio (QR) models in Muamalat, BRIS and BSB, Financing to Deposit Ratio (FDR) in BNIS, BRIS, BMS and BSB, Mudharabah Investment Certificate (SIMA) in BRIS and BSB, *Core Funding Ratio*

(CFR) in BSM, BNIS, BRIS and BSB. Simultaneously, all of the independent variables in this liquidity models are significant affect the dependent variables.

To determine the significance of the effect of all independent variables to the dependent variable, we used Critical F-value, by comparing Critical F-value generated by multiple linear regressions with the F-table at significant level of 95% ($\alpha = 5\%$). From the results of study showed that there are not significant for eight regression models, while twenty-one other models are significant.

Based on the Table 2, liquidity variables of Bank Sharia Mandiri, which consists of a Quick Ratio (QR) and Core Funding Ratio (CFR) variable showed positively influenced and significant with coefficient 0.118 and 0.256 respectively, it means that if the QR increase 1%, it will cause an increase 0.112% in capital adequacy ratio (CAR), ceteris paribus. As well as the CFR when increased by 1%, then the CAR will increase to 0.256%.

The increasing of quick ratio means those short-term assets have grown faster than short-term liquidity. The Increasing in financing must be accompanied by an increase in short-term assets in accordance to the business development of Islamic banks, short-term liquidity can be withdrawal at any time by the depositor can lead to reduced short-term assets of Islamic Banks. The capital would act as a bumper at any time if a lot of sudden reversal occurs within a short time. QR and CFR can be shown as liquidity adequacy ratio, then the increasing in liquidity adequacy ratios will be followed by an increase in capital ratios.

Table 2. Coefficient of Regression of CAR

BANK	QR	FDR	SIMA	CFR	ROA	ROE	FLP_T F	EA_T A	EA_G WT	LN_TA	GDP
BSM+	0.118**	0.069	-	0.256**	6.61**	-0.18**	0.101	0.15	0.12	0.043**	0.115
Mua+	-0.016	0.130	1.262	-0.146	-0.077	-1.967	0.007	-0.011	0.020	-0.786	0.620
BNIS+	-0.034	-0.097	0.343	0.100	2.320	-0.261	-0.906	1.436	0.132	-0.367*	-11.0
BRIS+	-0.009	0.109	-0.847**	0.077	3.682*	-0.465**	4.254**	0.398**	-0.114**	-0.072**	-2.859**
BMS+	-0.029	-0.13	-0.001	0.021	-1.361	0.054	1.871*	0.378	-0.155**	0.033*	0.032
BSB+	0.039	-0.56**	0.163*	-0.444	-1.331	0.544	-2.973	-0.130	0.178**	-0.035	-2.374

Notes: Dependent Variable: CAR. ** significant at 5%, *significant at 10%

The increasing of 1% of the Core Funding Ratio (CFR) of BSM also cause an increase 0.26% on CAR. It can be concluded that BSM core depositor's considerable influence in deposits. Funds that collected would be converted into financing and

would affect the value of risk-weighted assets (RWA) and eventually forcing to raise additional capital. It is very crucial to maintain the core depositors because the large withdrawal of fund from core depositors in a short time would make capital of Islamic banks became vulnerable.

Financing to Deposit Ratio (FDR) is statistically have negative and significant impact to the capital of the BSB, where every increase of 1% FDR will cause decrease 0.56% in capital. It quite large considering capital requirements compiled by BSB was relatively limited. The cause of the decline in capital caused by increasing of financing ratio of BSB that less quick to respond to the increased financing. The Increased of financing would have an impact on the increase in Risk Weighted Assets (RWA) that if capital is not increased significantly, it would lead to lower capital ratios that makes Bank Sharia Bukopin will be more difficult to cope risks that can occur anytime.

FDR of Islamic bank with a larger size like BSM, BMI and BRIS have positive influence on capital, this can be seen from the regression coefficient that has a positive value, 0.069, 0.130, and 0.109 respectively. It means that the three banks can quickly respond to the increasing of financing ratio compared to another Islamic banks in the period of study were smaller by assets like BNIS (-0.097), BMS (0.132) and BSB (0.563). BSB was the smallest assets to be the most vulnerable because if want to expand in the funding or financing the capital owned by BSB was not adequate, so it was risky if BSB too aggressive to expanding it financing.

Return on Assets (ROA) have significant and positive influence on the BSM and BRIS where the coefficients of regression respectively 6.61 and 3.68. If ROA increased by 1%, the capital respectively increased by 6.61% and 3.68%. It reflects that the increase in profitability can help to raising capital because the profit would be retained then would enlarge the capital. The opposite occurs in other components of profitability, Return on Equity (ROE) have negative coefficient, which was respectively -0.18 and -0.46. In the Quarterly Report, the capital has increased due to retained earnings thus denominator (equity) would be greater so that the results of its ROE was getting smaller. The liquidity instruments by the Islamic Bank was rarely used, from 6 bank as the object of this research, Mudharabah Interbank Agreement (SIMA) on the Interbank Islamic Money Market just used in the early establishment of Islamic banks.

SIMA has positive and negative effects for some of the capital of Islamic banks, BRIS's SIMA has a negative impact, and it means that if SIMA rises by 1%, the capital will fall by 0.847%. As for Bank Sharia Bukopin, SIMA has a positive impact; it means that if SIMA rises by 1%, the capital will increase by 0.163%.

Financing Loss Provision (FLP) serves as a backup charge anticipation of the loss of funding that cannot be billed. Provision ratio to assets is denoted by the symbol FLP_TF. The high ratio of the allowance for FLP capital, as demonstrated from BRIS and BMS whereby if each of the provision ratio of productive assets increased by 1%, CAR will rise respectively 4.25% and 1.87%.

EA_TA is the ratio between Earning Assets divided by Total Assets. This ratio is used to determine how much of existing assets in Islamic banks could be used for productive purposes. This ratio gives a positive influence to the capital of Islamic banks, if the Earning Assets increased it will be followed by the increasing of capital, one of them is BRIS when the earning assets to total assets ratio increase 1%, it will increase the capital significantly by 0.398%. This shows that Islamic banks have been able to respond to the increase in productive assets by increasing the amount of capital, the increase in earning assets should always be accompanied with the increase in capital as a step to anticipate the risks that might arise. Meanwhile BSB with smallest ratio of EA_TA has negative impact on capital.

In terms of growth, the growth in earning assets actually give a negative influence on bank capital as occurred in BRIS and BMS when any productive assets respectively increase by 1%, then CAR of each bank will drop respectively by 0.114% and 0.155%, this is a response of late increase of capital that not offset the increase of higher growth of productive assets. Meanwhile productive assets growth in BSB has positive effect on capital where the increase of productive assets by 1% would affected the increasing of 0.178% CAR. Islamic banks have different influences when viewed from the influence of assets to capital. For example in BRIS and BNIS, the large amount of their assets have negative influence to capital, whereby if the assets of each of the bank increased by 1%, then the CAR of each bank will drop respectively by 0.367% and 0.072%, In contrast to the BSM and BMS, the increase in total assets will have a positive influence on capital where the assets rise respectively by 1% would affected positively to the increase in CAR

respectively 0.043% and 0.033%. In external factors, the economic growth has a negative effect on the capital, which GDP increases by 1%; the CAR will decrease by 2.86%.

The results of QR regression models can be seen in the table 4:

Table 4. Coefficient of Regression of QR

BANK	CAR	ROA	FLP_TF	LN_TA	BUSI_MD	GDP_GWT	BI_RATE	JB1
BSM	0.45	-4.65	-4.45	-0.041	-1.028*	-3.97	-1.13	0.81
Mua⁺	-0.247	0.948	-1.260	-0.116**	0.263	-5.00**	6.834	-3.591
BNIS	2.02	9.966	-28.11	-0.313	2.082	49.047	-55.95	8.54
BRIS⁺	4.180	86.83**	-58.17**	-1.356**	-0.144	-53.002*	92.00	-41.70
BMS	-0.500	-3.994	9.583	0.111	0.380	-3.283	-6.019	0.308
BSB⁺	0.445*	-5.567	-16.159	-0.093	-0.483	1.823	3.598	0.960

Notes: Dependent Variable: QR. ** significant at 5%, *significant at 10%

Based on the Table 4, Islamic banks capital as reflected by the CAR has a positive effect on short-term liquidity, as reflected by QR. One of them is BSB, wherein if the CAR increased by 1%, then the QR will increased by 0.45% significantly. This shows that the capital increase would significantly affected the increase in the short-term liquidity ratio, thus the increase in capital has a vital role in overcoming short-term liquidity problems.

Islamic banks in Indonesia are newly established or spin-off of from the holding conventional bank in the last 10 years. The new establishment factor makes Islamic bank classified as rapid growth category. It can be seen from quite a large influence on the profitability of short-term liquidity of Islamic banks, which each 1% increase reflected in the profitability ratios ROA, it wills positively significant influence to the increasing in short-term liquidity ratio amounted to 86.83%. The new companies generally stand in rapid growth stage that is marked by business expansion and rapid growth in profit.

Financing Loss Provision (FLP) is a backup performed by the Islamic Bank as precaution against financing that not collectible. Therefore, FLP is so unproductive idle funds. Therefore FLP increasing indirectly to the liquidity of Islamic banks, that increased their provision ratio of productive assets by 1%, will reduce the ratio of short-term liquidity (QR) amounted to 58.17%.

In some cases in Islamic banks, the amount of assets may affect negative and significant short-term liquidity. As it happened in Bank Muamalat Indonesia and Bank BRI Sharia, if an increase in assets of respectively 1%, the QR will decrease respectively by 0.116% and 1.356%. This decrease occurred due to short-term liabilities of Islamic banks grew much faster than short-term assets. Lack of liquidity instrument to allocate funds raised by Islamic banks is one of the factors that cause it.

BUSI_MD is the ratio of profit sharing revenue to total revenue of Islamic banks. The bigger of the revenue ratio to result in a financing portfolio of Islamic banks, can reduce the ratio of short-term liquidity. This happened at BSM when every increase in the ratio of revenue for financing the results of the total revenue of 1%, it would lower the ratio of short-term liquidity amounting to 1.028%. The large amount of revenue from financing is inseparable from the amount of financing provided which can be reflected in the ratio of financing to deposit ratio (FDR). Thus Islamic banks would experience liquidity problems, especially in short-term liquidity given almost of third-party funds from depositor entirely used for financing.

Economic growth in this study has negative impact on short-term liquidity of Islamic banks. It reflected in the growing influence of GDP to QR of BMI and BRIS when every economic growth of 1%, it would caused a decrease in the ratio of short-term liquidity of BMI and BRIS respectively 5% and 53%. A sharp decline from Bank BRI Sharia is because the study period, Bank BRI Sharia is still relatively new stand so that transactions and business developments tend to be volatile. Meanwhile external monetary factors have no significant effect on the ratio of short-term liquidity.

Table 4. Coefficient of Regression of FDR

BANK	CAR	ROA	FLP_TF	LN_TA	BUSI_MD	GDP_GWT	BI_RATE	JBI
BSM ⁺	0.176	5.20*	-2.39	0.039	0.242	0.133	4.88	-1.45
Mua ⁺	0.448	7.482**	6.767	0.042	0.367	2.371	-9.452*	4.919
BNIS ⁺	-2.09	3.716**	-19.96	-1.25	0.321	-70.58**	3.299	-2.27
BRIS ⁺	0.089	12.142**	2.043	-0.061	-0.229	-7.43	3.354	-1.003
BMS ⁺	0.520	3.046*	7.662*	0.065	-0.296	-4.466**	-4.317	3.052
BSB ⁺	-0.841**	5.437	-14.661	0.031	-0.269	-7.818*	-9.055	7.467*

Notes: Dependent Variable: FDR. ** 5%, *significant at 10%

The capital adequacy ratio (CAR) has a negative influence on the ratio of financing to deposit ratio (FDR) on BSB, where every increase of 1% of CAR will decrease by 0.841% FDR. As a relatively new establishment company, Islamic banks would be more expansive than the conventional banks. From these results it can be seen that the ratio of profitability are reflected in return on assets (ROA) has positive impact on FDR for all Islamic banks. If ROA increase 1%, FDR will cause an increase of at least 3%, and for FDR of BRIS rises due to the increase in profitability is 12.14%.

FLP to productive assets (PA) has a positive influence to affecting Islamic banks FDR. If FDR of BSM rises by 1% will increase the ratio FLP/PA amounted to 7.62%. Financing risks would be higher if Islamic banks continue to decide to increase its financing portfolio so that in it will increase the FLP. But too high increase can also indicate that the financing provided by Islamic banks is less qualified.

Economic growth as external factors gives a negative influence on FDR Islamic Bank. If economic growth rises, FDR down and if economic growth down the FDR will rise. The negative influence of economic growth due to the large amount of financing provided by Islamic banks, which, if the economic growth was rising, the level of financing would also rises. Conversely, if the economy goes down, the amount of financing provided Islamic bank would also go down. It showed symptoms of banking procyclicality on economic growth. The BI Rate has negative impact to the ratio of FDR on BMI. The increase in the BI rate by 1%, then the FDR would be down by 9.45%. BI Rate increase would indirectly raised interest rates on both savings and loans. BI Rate increasing in

research led to a decrease in FDR preceded by a decline in the growth of credit or financing.

JIBOR is a reference rate used in financial transactions, among others for the reference-floating rate, derivatives interest rate and the valuation of financial instruments denominated in rupiah. JIBOR use to expected and support the creation and efficiency of money market liquidity in money market transactions, which will be strengthen the stability of the monetary and financial system in Indonesia (Bank Indonesia: 2015). JIBOR 1 month in this study have a positive influence on FDR BSB, when every increase JIBOR 1 month amounted to 1%, it will lead to increase of 7.467% FDR.

Table 5. Coefficient of Regression of SIMA

BANK	CAR	ROA	FLP_TF	LN_TA	BUSI_MD	GDP_GWT	BI_RATE	JB1
BSM	-	-	-	-	-	-	-	-
Mua	0.089	-0.117	-0.093	-0.002	-0.001	0.064	-0.116	0.099
BNIS	0.097	0.302	0.259	0.097	0.026	2.381	2.467	2.136
BRIS+	-0.178	10.312*	-1.891	-0.154**	0.086	-7.282*	9.948	-3.640
BMS	0.230	1.146	3.637	0.001	-0.060	-0.924	-2.219	2.196
BSB+	0.209	-10.204**	7.157	-0.159	-1.083**	1.045	5.52	0.824

Notes: Dependent Variable: SIMA. ** significant at 5%, *significant at 10%

Interbank Mudharabah Agreement or IMA certificate is a certificate used as a medium to raise funds in secondary market with the Mudharabah principle. SIMA is one of the main instruments used by Islamic banks to transact in Islamic Interbank Money Market (PUAS). In this study Islamic banks which has long established like BSM and BMI, the intensity of the use of SIMA was already getting a bit, even for BSM has no use SIMA again as an instrument of liquidity in the interbank money market Sharia (PUAS). SIMA liquidity instrument commonly used by Islamic banks that just established. As shown in table 6 that 1% increase in assets would cause a decrease of 0.54% SIMA transactions in BRIS.

Based on these results of this study the capital have a positive influence on the SIMA when any 1% increase in capital would made SIMA transaction increased 1% in BMI. Obviously the increase in liquidity SIMA instruments is needed considering the capital increased makes busiest activities in Islamic

banks, thus it requires adequate liquidity facility in the Interbank Islamic Money Market.

Profitability have two different effects, which in BRIS, profitability has positive influence while Bank Sharia Bukopin has negative influence. The ROA parameters of BRIS are 10.31% and -10.2% for Bank Sharia Bukopin.

While BUSI_MD variable as the ratio for the Islamic banks revenue sharing income showed a negative influence on BSB, when 1% increases of Islamic Banks revenue sharing income/bank's total income, there would be a decrease of 1.08% of SIMA. In SIMA there is revenue sharing income if banks transacts in Islamic Interbank Money Market (PUAS), SIMA transactions have not widely used yet in the Islamic Banks, the increase in the ratio BUSI_MD will certainly lower the transaction portion of SIMA, especially in getting revenue sharing in PUAS through SIMA instrument.

GDP as external factors in this study has negative influence on SIMA when every 1% increase in GDP would lead to decline 7.28% SIMA transactions. While other external variables, such as JIBOR 1 month has no impact on each bank in this study. The absence of this effect is due to the Islamic Interbank Money Market (PUAS), which tend still quiet transaction.

Table 6. Coefficient of Regression of CFR

BANK	CAR	ROA	FLP_T F	LN_TA	BUSI_M D	GDP_G WT	BI_RA TE	JBI
BSM ⁺	1.006*	-4.548**	0.247	-0.045**	0.139	3.361**	-0.095	1.038
Mua ⁺	-0.522	1.106	-3.271	-0.019	0.122	-1.423	-3.647	0.760
BNIS ⁺	-0.366	1.344**	1.838	-0.105	0.468**	-12.467**	10.034*	-7.115**
							*	
BRIS ⁺	0.037	-2.525	-0.821	0.035	0.087	-3.757	3.745	-4.261*
BMS	0.519	-0.934	-5.145	-0.080	0.178	-3.193	7.364	-4.984*
BSB ⁺	0.185*	1.527	-2.462	-0.050	-0.115	2.916	-1.278	1.570

Notes: Dependent Variable: CFR. ** significant at 5%, *significant at 10%

Core Funding Ratio (CFR) is the ratio of core depositors against third-party funds in Islamic Banks. The higher of the CFR indicates that Islamic banks have little option in the differentiation of their depositors. CFR is a rather crucial component in the funding of Islamic banks considering core depositors can hold a significant role in

funding of Islamic banks. With the large amount of funding, the depositor may withdraw their funds in a large amount suddenly that it would negatively affect Islamic Banks liquidity.

CAR has a positive influence on CFR BSM and BSB with each parameter for 1.006 and 0.185, meaning that any increase in CAR amounted to 1%, will cause an increase in capital, each for 1.006% and 0.185%. While the increasing in profitability that reflected by the ROA at BSM showed a negative influence when any 1% profit growth, it would decreased the BSM CFR amounted to 4.55%, the opposite occurs in BNIS where the increasing in profit growth at 1% would increased the ratio of CFR amounted to 1.344%.

This difference also occurs in its influence on the GDP, when 1% any increase GDP growth, it would caused 3.36% rise CFR ratio in BSM. While at BNIS, any 1% increase in the GDP growth would cause a decrease 12.47% CFR ratio. This difference occurs because of establishment and size differences of each bank. In line with the positive impact the profitability to the CFR, the BUSI_MD ratio that reflects the ratio between the revenue sharing income/total revenues ratio to CFR, it's also showed a positive influence. Every increase of 1% BUSI_MD ratio in BNIS, it will cause an increase 0.47% of CFR ratio. BSM on the other hand, the 1% increase in assets would reduce 0.045% of CFR ratio. In external variables such as BI Rate, it has a positive influence on the CFR ratio at BNIS, when any 1% increase in the BI rate it will cause 10.034% increase of CFR ratio. This is due to the high ratio of CFR owned by BNIS, thus if the BI Rate as the benchmark interest rate is raised, it will push up interest rates conventional bank or yield of Islamic banks, so automatically core depositors in Islamic banks will increase the number of savings to maximize profits. JIBOR 1 month, negatively influence to the CFR ratio in BNIS, BRIS and BMS when every increase JIBOR 1 month for each 1%, then the ratio of CFR each Islamic bank will decrease by 7.115%, 4.261% and 4.984%.

Discussion

The result of CFR indicates that the amount of third party funds (amount of deposits) increased gradually, meanwhile ratio of FDR increased more

than 100%. This means Islamic banks used equity fund for financing customers. If number of depositor withdraw dramatically, Islamic bank would be at high risk or default. This result show that the main problem of Islamic banks in Indonesia is how to increase equity in line with increasing third party fund. Another problem is that Islamic bank face difficulties to find debt for solving liquidity problem due to lack of instruments for liquidity derivative. Therefore Islamic banks rely on third party funds which are high cost of funds due to time deposit fund, rather than using current deposit and saving deposit fund. Rusydiana (2016) suggested the Islamic banks to strengthen the capital and business scale.

In consequences, Islamic banks have high level of Operational Expenses Ratio (OER), thus is not efficient. This can be indicated from the data obtained from Financial Service Authority (FSA) of Indonesia which show the ratio of NIM is low around 0 to 1%, meanwhile conventional banks NIM is from 2% to 5%. In conclusion, low level of equity can create inefficiency and reduce profitability because Islamic banks is rely on third party funds, Islamic banks should give high level of return to funding customers. This mean that Islamic banks walk to use expensive funds. Because the limitation of derivative instruments, Islamic banks cannot get cheaper funds. Widigdo, et.al. (2016) suggested it shoud reengineering of business process of the third party fundraising. Sukmana and Suryaningtyas (2016) confirm that the role of capital and bank's performance to the banking liquidity. However, according to Yulita and Rizal (2016) the Indonesian Islamic banking industry is more efficient than Malaysian Islamic banking industry.

Negative coefficient of GDP to QR indicate that if macroeconomics of Indonesia is stable and good environment, Islamic banks will expansive the market. Meanwhile Islamic banks have now low level of liquidity buffer. This means Islamic banks face high level of risk if core depositors withdraw money rushly, it became default. In consequences of low level of liquidity buffer, money market among Islamic banks are low stock of money. There is no much space to use money in Islamic money market. Again Islamic banks have to expansive market rely on third party funds.

CONCLUSION

The liquidity and capital model from Distinguin *et. al.* (2013) in the research showed that several model of each banks are not significant simultaneously, then most of partial test of model are not significant. The models are not significant to apply in some of Islamic Banks in Indonesia. For the next research, the new suitable liquidity and capital model are required to understand about the changes of liquidity and capital of Islamic banks in Indonesia. However, the results of the study have implication towards the condition of liquidity of Islamic bank in Indonesia. Islamic banks in Indonesia are lack for liquidity instruments, on the other hand Islamic banks often operate in short term period, so it is vulnerable for Islamic banks without adequate liquidity instruments.

Short-term liquidity could be withdrawal at any time by the depositor and lead to reduce short-term assets of Islamic Banks. The capital would act as a bumper at any time if a lot of sudden reversal of fund from depositors. In the period of study, the Islamic banking capital in Indonesia was strong enough.

It is important for regulator to assess and develop policies related to the deepening of Islamic interbank money market in order to strengthen short-term liquidity of Islamic banks, which is still very limited. In addition, supervision for Islamic banks to be further improved in Islamic banks supervision, especially it has procyclicality to economic condition as well as in conventional banks.

In addition to short-term liquidity needs, regulator also should encourage Islamic banks to use sharia commodity that traded in the Jakarta Futures Exchange, as one solution of short-term liquidity needs. In Malaysia, sharia commodity trading has proven to solved the liquidity needs problem.

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